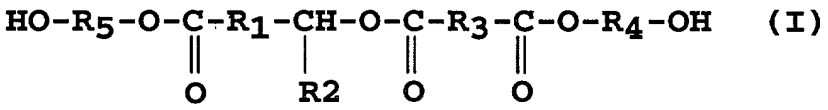
CLAIMS

1. Polyester polyols comprising compounds of formula (I)



wherein

R_1 represents an alkylene group or an alkenylene group, in particular a group with 5 to 20 C-atoms, especially preferred the group $-(CH_2)_7-CH=CH-CH_2-$,

R_2 represents hydrogen or in particular an alkyl group or an alkenyl group with preferably 2 to 20 C-atoms, particularly preferred the group $-(CH_2)_5-CH_3$,

R_3 represents an aliphatic, in particular a cyclic aliphatic, or aromatic group,

R_4 represents a linear or branched alkylene group, in particular neopentylene and

$R_5=R_4$, or R_5 represents an optionally hydroxyl group substituted linear or branched alkylene group that differs from R_4, in particular a neopentylene group or a hydroxymethyl substituted ethylene group,

or mixtures of compounds of formula (I).

2. The polyester polyols of Claim 1 that are producible by half ester formation between one dicarboxylic anhydride, in particular a cyclic dicarboxylic anhydride, and a saturated or unsaturated fatty acid carrying at least one

secondary hydroxyl group, or an ester of a respective fatty acid, or a mixture thereof, and final esterification by at least one polyol.

3. The polyester polyols of Claim 2 wherein the ester of a fatty acid is castor oil and the fatty acid is ricinoleic acid.

4. The polyester polyols of Claim 2 wherein the ratio between anhydride and hydroxy-equivalent of castor oil is from 0.5 : 1 to 2 : 1.

5. The polyester polyols of Claim 2 wherein the at least one dicarboxylic anhydride is a cyclic 1,2-dicarboxylic anhydride, in particular hexahydrophthalic anhydride in pure form or mixed with tetrahydrophthalic anhydride and/or succinic anhydride.

6. The polyester polyols of Claim 2 wherein the polyol for the final esterification is a polyol with exclusively primary hydroxyl groups, in particular neopentylglycol.

7. The polyester polyols of Claim 2 wherein the hydroxyl equivalent is from 150 to 250.

8. The polyester polyols of Claim 2 wherein said polyols are obtainable by the reaction of the at least one fatty acid or the at least one ester of a fatty acid with the at least one anhydride of a dicarboxylic acid at temperatures of 150°C to 200°C in the presence of an esterification catalyst and final esterification with the at least one polyhydroxyl compound at 230°C to 250°C.

9. A two component polyurethane coating or two component polyurethane adhesive wherein the curing component comprises polyester polyols of Claims 1 and wherein the curing component comprises a curing agent on isocyanate basis, in particular hexamethylene-diisocyanate(HDI)-cyclotrimerisate.

10. A method for the production of polyester polyols of Claim 1, wherein at least one saturated or unsaturated fatty acid and/or at least one ester of a saturated or unsaturated fatty acid is reacted with at least one anhydride of a dicarboxylic acid, in particular a cyclic dicarboxylic anhydride, under formation of a half ester, wherein the fatty acid contains at least one, in particular one stericly hindered, secondary hydroxyl group, and wherein the formed half ester is finally esterified with at least one polyhydroxyl compound, in particular glycols.

11. The method of Claim 10 wherein the fatty acid is ricinoleic acid and the ester of fatty acid is castor oil.

12. The method of Claim 11 wherein the ratio between anhydride and hydroxy-equivalent of castor oil is from 0.5 : 1 to 2 : 1.

13. The method of Claim 10 wherein the at least one dicarboxylic anhydride is a cyclic 1,2-dicarboxylic anhydride, in particular hexahydrophthalic anhydride in pure form or mixed with tetrahydrophthalic anhydride, and/or succinic anhydride.

14. The method of Claim 10 wherein the polyol for the final esterification is a polyol with exclusively primary hydroxyl groups, in particular neopentylglycol.

15. The method of Claim 10 wherein the hydroxyl equivalent is from 150 to 250.

16. The method of Claim 10 wherein the reaction of the at least one fatty acid or the at least one ester of a fatty acid with the at least one anhydride of a dicarboxylic acid is performed at temperatures of 150°C to 200°C in the presence of an esterification catalyst and final esterification with the at least one polyhydroxyl compound at 230°C to 250°C.

17. The method of Claim 10 wherein the water formed during final esterification is removed by an entrainer, in particular neopentylglycol.